



Aegis Ballistic Missile Defense

Mission

The Aegis Ballistic Missile Defense (Aegis BMD) element of the Ballistic Missile Defense System (BMDS) will provide the capability for Aegis cruisers to use hit to kill technology to intercept and destroy short and medium range ballistic missiles in the 2004-2006 timeframe.

Concurrently, technology insertion efforts will continue to facilitate expansion of the Aegis BMD battlespace to include intermediate range ballistic missiles in 2006. While the primary focus of Aegis BMD is to counter the ballistic missile threat in the ascent and midcourse phases, future flight tests will also address the element's ability to intercept ballistic missiles lower in the exo-atmosphere. Finally, designated Aegis equipped ships will be modified to expand the ability of Aegis BMD to provide surveillance and track of ballistic missiles to the BMDS and Ground-based Midcourse Defense (GMD) element, thereby acting synergistically with other BMDS elements to provide an additional layer of defense to the nation, deployed U.S. forces, friends, and allies.



Program Description

The Aegis BMD element of the BMDS builds upon the existing U.S. Navy Aegis Weapons System (AWS) and the Standard Missile (SM) infrastructure currently deployed on both TICONDEROGA class Cruisers and ARLEIGH BURKE class Destroyers.

Aegis BMD capability is developed in two-year blocks that build, verify, and offer specific capabilities beginning in 2004 with each successive two-year block providing increased capabilities to counter ballistic missiles. The Aegis BMD system development and testing will be integrated with the BMDS Testbed and BMDS architecture while fully supporting the MDA's evolutionary, capability-based block acquisition strategy.

The Aegis BMD Block 2004 develops the first Aegis BMD system that is certified for tactical deployment. Using a BMD modified AWS and an SM-3 guided missile, the Block 2004 system will defeat unitary and separating targets with Aegis BMD configured Cruisers and SM-3 guided missiles.

The Aegis BMD Block 2006 will evolve from the Block 2004 Aegis weapon system with the focused development on improved prototype radar discrimination. The Block 2006 system provides a production opportunity to modify additional Aegis Destroyers with GMD surveillance and tracking capability. Block 2008 develops the Aegis BMD weapon system with fully integrated advanced radar discrimination. The Block 2010 system is currently expected to add Ballistic Missile Defense capabilities to the Navy Open Architecture



system using the evolutionary acquisition strategy and will result in ever increasing capabilities against ballistic missile threats.

The U.S./Japan Cooperative Research program is a part of our security alliance with our allies and compliments the incremental capability approach. This program performs research on key components benefiting both the U.S. and Japan. It will continue per the U.S. Department of Defense/Japan Defense Agency Memorandum of Agreement signed in 1999 to conduct cooperative research in BMD. The focus of research is on four components of the SM-3 guided missile: sensor, advanced kinetic warhead, second stage propulsion, and lightweight nosecone.

Aegis BMD Flight Testing

The test program for Aegis BMD focuses on the testing of system upgrades in incremental steps. The TERRIER Lightweight Exo-Atmospheric Projectile (LEAP) Program, which included four flight tests between 1992 and 1995, demonstrated that LEAP could be integrated into a sea-based tactical missile for ballistic missile defense based on exo-atmospheric intercepts.



The Aegis LEAP Intercept (ALI) project of the Aegis BMD element built upon the lessons learned from the TERRIER-LEAP program and emerging technologies. The goal of the ALI tests was to demonstrate an exo-atmospheric guidance-to-hit intercept of a ballistic missile test target with an AWS controlled engagement using the SM-3 guided missile. The ALI test requirements were satisfied with two successful intercepts from the USS LAKE ERIE (CG-70), Flight Mission 2 (FM-2) and FM-3 in January 2002 and June 2002 respectively.

Transition of Aegis BMD from ALI flight-testing to Block 2004 capability flight-testing commenced with FM-4 in November of 2002. This mission, also from the Aegis cruiser USS LAKE ERIE (CG-70), successfully intercepted a more stressing ballistic missile target during the ascent phase of the ballistic missile's trajectory. While FM-2 and FM-3 intercepts occurred in the descent phase of the ballistic missile's trajectory, FM-4 demonstrated expansion of Aegis BMD's emerging capability to include the entire midcourse battlespace. Aegis BMD Block 2004 capability flight-testing will continue with FM-5 through FM-9 and will demonstrate the Aegis BMD's capability against more stressing ballistic missile targets.

In addition to the aforementioned testing, the Aegis BMD element will conduct critical experiments in order to gain additional data to reduce program risk. For the Critical Experiment series, Aegis BMD will collect data using test beds, early engineering prototypes, and calibrated flight test instrumentation to reduce risk for the evolving radar, seeker, missile, and ship systems designs.

*Missile Defense Agency
7100 Defense Pentagon
Washington, D.C. 20301-7100*

<http://www.acq.osd.mil/bmdo/bmdolink/html/>

April 2003